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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,171	11/13/2000	Hirokazu Iguchi	001478	2138

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WASHINGTON, DC 20006

EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 08/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/700,171

Applicant(s)

IGUCHI ET AL.

Examiner

Rip A. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4 is/are rejected.
- 7) ☒ Claim(s) 2,3 and 5-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

This office action follows a request for continued examination under 37 CFR 1.114 filed on December 27, 2002. A petition for suspension of action under 37 CFR 1.103(a) was submitted on January 22, 2003. On March 28, 2003, Applicants filed a preliminary amendment in which claim 1 was amended. Notably, the claim recites specific polyfunctional monomers in order to exclude dienes.

#### *Claim Objections*

1. Claim 1 is objected to because of the following informalities: The claim is incomplete. A comparison of the amended version with the accompanying marked-up copy reveals that the graft monomer component and the lower limit of the reduced viscosity is missing from the claim. A revised clean version is required in Applicant's response.
2. Claim 7 is objected to because of the following informalities: The term "C<sub>5</sub>" appears to be a typographical error and should state "C<sub>6</sub>" instead. If this is the case, then claim is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 6. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

*Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 4 indicates that organosilanes qualify as "other monomers copolymerizable therewith (*as per* claim 1)" While it can be seen that species such as  $\beta$ -methacryloyloxyethyl-dimethoxysilane is representative of such a monomer, it is not understood how conventional cyclic siloxanes and alkoxysilanes, as exemplified in the claims and specification, are "copolymerizable therewith."

An appropriate polyfunctional monomer could serve to crosslink the siloxane/alkoxysilane with the main alkyl acrylate portion of the elastomeric polymer and thereby be loosely considered "copolymerizable." However, the polyfunctional monomers listed in the parent claim 1 do not appear to possess the appropriate functional groups to allow for such an embodiment. Therefore, the application does not appear to be enabling for use of organosiloxanes for the copolymerizable monomer component. Elucidation to clarify this discrepancy between claims is requested.

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5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites use of "alkyl acrylates other than those having a C<sub>2</sub> to C<sub>8</sub> alkyl group, acrylic esters..." It is not clear how these two recited components define different embodiments.

*Allowable Subject Matter*

7. Claim 1 will be allowed pending revision to overcome the claim objection and upon appropriate response to rejection under 35 U.S.C. 112, first paragraph set forth in this office action.

The present invention relates to a vinyl chloride resin composition comprised of PVC resin modified with a graft copolymer and containing CaCO<sub>3</sub> extender. The components of the graft copolymer are unexceptional, being comprised of methyl methacrylate, *inter alia*, grafted onto an elastomeric polymer composed of alkyl acrylate and polyfunctional monomer (see claims). The defining feature that appears to distinguish the inventive graft copolymer from those of the prior art is the reduced viscosity (30 °C, 0.2 g/100 mL in acetone) of the MEK extract of the graft copolymer, which lies in the range of 1-5.

The following references relate to compositions containing polyvinyl chloride resins modified with non-diene based graft copolymers. None of the cited documents discloses the graft copolymers of the present claims.

U.S. Patent No. 6,204,327 to Takaki *et al.*

U.S. Patent No. 5,424,363 to Nagata *et al.*

U.S. Patent No. 5,362,790 to Gloesener

U.S. Patent No. 5,132,359 to Sasaki *et al.*

U.S. Patent No. 4,220,734 to Kosugi *et al.*

U.S. Patent No. 4,128,605 to Kishida *et al.*

8. Claims 2, 3, 6, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable when revised to overcome rejections under 35 U.S.C. 112 and if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable when revised to overcome the claim objection set forth in this office action and if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

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August 14, 2003

  
DAVID W. WU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700